

DISPOSITION OF PUBLIC COMMENTS

AC 25.621-X, *Casting Factors*
Prepared by Todd Martin, ANM-115

No.	Comment	Requested Change	Disposition
Commenter: Boeing			
1.	<p>Paragraph 5 provides general guidance on factors, inspections, testing, and rework.</p> <p>Paragraph 6 provides information on the history of special factors, the need for such factors, and the relationship of the rule to §25.619.</p> <p>Re-formatting will improve readability and make it easier to reference paragraphs and sub-paragraphs of the AC.</p>	<p>We recommend re-ordering Paragraphs 5 and 6 to show background information before guidance information.</p> <p>Additionally, we suggest re-formatting the guidance information for consistency with other sections of the draft AC.</p> <p>Specific revisions to the AC text are provided.</p>	<p>We agree and have re-ordered paragraphs 5 and 6 in the final AC. We agree with some of the text revisions and have incorporated those changes accordingly.</p> <p>We did not include any additions to the final AC that simply restate the requirements in the rule. In addition, we have deleted some statements included in the proposed AC that restated the requirements in the rule.</p>
2.	<p>Proposed paragraph 5 provides guidance on the use of casting factors, inspections methods, inspection frequency, static testing, and rework of castings.</p>	<p>Revise the paragraph title to be consistent with content.</p> <p>Additionally:</p> <ul style="list-style-type: none"> • add guidance on bearing surfaces [§25.621(b)]; • clarify guidance on inspections and equivalent inspection methods (including magnetic particle inspections); • expand guidance on static testing; • expand guidance on rework of castings <p>The changes within the proposed revision will improve comprehension and compliance with the current guidance.</p>	<p>We believe the paragraph title (<i>General Guidance for Use of Casting Factors</i>) is appropriate and does not need to be revised.</p> <p>We added the suggested guidance on inspections, static testing, and rework, with some changes.</p> <p>We did not add the suggested guidance on bearing surfaces because we believe it simply restates the requirements in the rule.</p>
3.	<p>Paragraph 5b provides guidance on inspection methods, largely repeating the</p>	<p>We recommend incorporating guidance on equivalent inspection, including</p>	<p>We agree and added some of the suggested</p>

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	rule text. However, there is no mention of “equivalent inspections,” as is allowed by the current and proposed regulations.	<p>magnetic particle inspection methods.</p> <p>The current rule specifies “... magnetic particle or penetrant inspection methods or approved equivalent nondestructive inspection methods.” However, the proposed harmonized rule states “... using visual and liquid penetrant, or equivalent, inspection methods.” The current rule text suggests that magnetic particle is equivalent to liquid penetrant methods; therefore, the AC should add guidance on equivalent inspection methods.</p>	<p>guidance on equivalent inspection methods.</p> <p>We do not agree with the suggested guidance that says magnetic particle inspections are commonly accepted as equivalent to liquid penetrant. Equivalency should be evaluated on a case by case basis.</p>
4.	<p>The proposed text states:</p> <p>“c. With the establishment of consistent production, it is possible to reduce the inspection frequency of the non-visual inspections required by the rule for non-critical castings with the approval of the Administrator. ...”</p> <p>Requiring “Administrator approval” could be interpreted to mean that a compliance finding for a revised inspection program may not be delegated.</p> <p>Historically, the FAA has delegated compliance findings for §25.619 through §25.625. It is our understanding that current delegations would not be negated</p>	<p>We request that the policy confirm that any previous delegations of compliance findings associated with this subject continue to be assured.</p> <p>We request that this AC provide confirmation that its requirements do not preclude delegation to capable designees or organizations.</p>	<p>We do not believe that the subject of delegation should be addressed in either the rule or AC. The current rule refers to an “approved quality control procedure,” and this is not changed in the final rule. The proposed paragraph that referenced the “approval of the Administrator” has been removed.</p>

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	by instructions in advisory materials. However, the current rule, proposed rule, and current guidance do not provide specifics on approval requirements.		
5.	<p>The proposed text states: “e. If applicable, the effects on material properties due to weld rework should be addressed. The extent and scope of weld rework should be detailed in the manufacturing specifications as well as on the design drawings.”</p> <p>The proposed text requires that rework be specified on the design drawings, which is not typically the case for other rework processes.</p> <p>In addition, the proposed text only addresses weld rework, and does not provide for other rework process that could affect the material properties of the casting.</p>	<p>We recommend revising the statement to provide the option of referencing a qualified process in lieu of providing details within the design drawing.</p> <p>We also recommend revising this paragraph to address other rework processes.</p> <p>“Rework” processes are not typically detailed on design drawings when a qualified process exists that can be referenced. Adding the option to incorporate rework processes in design drawings by reference (in lieu of direct specification) will reduce the burden for those entities that have such documented processes.</p>	We agree and added the suggest guidance on rework, with some changes.

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	Commenter: Dassault Aviation		
1.	§4: Could the definitions be completed as	Suggest that the definitions be completed	The proposed AC is already harmonized with the

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	in AMC 25.621(c)(1)? Could also examples of critical castings be given as in AMC?	as in AMC 25.621(c)(1) and that examples of critical castings be given as in AMC.	AMC as suggested. No change is necessary to final AC.
2.	§5.a.: Same question than for 25.621 §(c)(2)(ii): Static specimen are noticed only? Critical castings if classified as PSE should also answer to section 25.571 concerning fatigue and damage tolerance.	Perhaps a note should be added to remind that one fatigue plus damage tolerance test specimen is requested too.	Agreed. The AC was revised to indicate that castings are subject to the requirements of § 25.571.
3.	§5.e.: The following precision could be added: "In particular, test specimen should present representative weld reworks."	§5.e.: The following precision could be added: "In particular, test specimen should present representative weld reworks."	The paragraph addressing rework has been revised to indicate that: "Evaluation of effects of rework processes on material properties should include analysis supported by test data. Material properties of reworked areas should have a population coefficient of variation consistent with the type of casting factor selected for the casting."
4.	§6.a.(1): There is no requirement for deformation under ultimate loads.	It is proposed to modify the last sentence suppressing "and deformation" as: "... and the application of special factors of safety for ultimate strength."	Section 25.305(b) does include deformation requirements for ultimate loads, so we do not agree with deleting the reference to deformation. No change.
5.	§7.b.(4)(c): Remark: To be noticed that ISO 4986 is given 2 times.	Delete duplicate reference.	Agreed. The duplicate reference was deleted.
6.	§7.b.(5): "Typically, the evaluation to compare the cast material to wrought material should use the ultimate tensile strength and tensile yield strength."	Compare also the fatigue and damage tolerance propagation and residual strength properties.	Since casting factors apply only to the strength requirements, rather than fatigue and damage tolerance requirements, the comparison of cast material to wrought material should be based on material strength properties. No change.